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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,151

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EXAMINER

SUCHFIELD, GEORGE A

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,151	Applicant(s) BOSMA ET AL.	
	Examiner GEORGE SUCHFIELD	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1” has been used to designate both the wellbore and the “earth formation layer”.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: no label “4” appears in Figure 4, as set forth in the specification in page 11, lines 10-20.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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While providing antecedent basis for the abbreviations or acronyms(?) set forth in the Markush grouping of claim 4, for example in page 5, line 24 – page 6, line 26, the specification is deemed lack sufficient enablement insofar as it is not clear what any of these abbreviations or acronyms represent. More specifically, the generic terminology preceding these abbreviations does not appear to coincide with the abbreviations. For example, while “styrene butadiene copolymer rubber” could reasonably be construed as comprising “(SBR)”, it is not clear how “(BIIR)” comprises or coincides with “brominated butyl rubber”. What does “II” stand for? Similarly, “(EPM and EPDM)” does not directly correspond to “Ethylene Propylene Rubber”; “neoprene rubber” does not directly correspond to “(CR)”; “Fluorsilicone (should be Fluorosilicone?) Rubber” does not directly correspond to “(FVMQ)”; and so on.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4 and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Insofar as it is not clear what the abbreviations in claim 4, such as “NBR” comprises, as noted above in Para 5), claim 4 is further deemed indefinite.

Regarding claims 8 and 10, the phrase “for example” and/or “preferably” renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 9 is deemed indefinite with respect to all of the terms and chemical symbols which have been placed in parenthesis, such as “(M-CH₃COO)” and “(M-HCO₃)”. In this regard, it is

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not clear whether such terms or symbols comprise positively-recited claim steps or limitations, especially since a further definition of the term(s) "M is a metal selected from the group of metals of the periodic table" does not appear in parenthesis.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-12, 15 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuka (5,290,844).

Otsuka (note col. 2, lines 1-47; col. 3, lines 40-68; col. 5, line 19 – col. 6, line 18)

discloses a system and method for sealing spaces comprising a shaped and vulcanized body which swells in the presence of water. Such shaped and vulcanized body comprises a polymer matrix material which includes one or more water-swellaable compounds within such polymer matrix, such as the component or compound (C) and/or (G). While no specific well application or use is explicitly set forth in Otsuka, it is further noted that the shaped and vulcanized body, also referred to as a “water stop”, may be used in myriad applications, including “civil engineering”, “prevention of water leakage through the joints in the shield tunnel works”, and “water-retaining material in agriculture”. Thus, it is deemed that the shaped and vulcanized body of Otsuka is capable of use in a wellbore, especially in view of the reference to civil engineering

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applications; and with the particular application of “prevention of water leakage” in tunnels and other earthen environments making it likely that at least a portion of such water leakage will comprise “formation” water. It is further deemed, with respect to claim 1, that since the shaped and vulcanized body of Otsuka appears to correspond to the recited vulcanized “swellable body” in overall composition, it will inherently or necessarily function in the noted civil engineering and/or agriculture application(s) by allowing osmosis of the encountered water into the body while maintaining the presence of the swellable material within the overall polymer matrix, as called for in claim 1.

As per claim 2, the compound (C) and/or (G) does not appear to subsequently move or separate out of the emplaced shaped and vulcanized body; hence the surrounding polymer matrix appears “impermeable” to the compound(s).

As per claims 3 and 4, the resulting polymer matrix is formulated from an elastomer, such as one or more of the rubber compounds recited claim 4.

As per claims 5 and 6, the components or compounds (C) and/or (G), noted above, comprise particles which appear uniformly dispersed in the polymer matrix.

Similarly, after the final vulcanization step in the overall process of preparing such shaped and vulcanized body, the components or compounds (C) and/or (G) become “embedded” in the polymer matrix, as called for in claim 7.

As per claims 11 and 12, the additional well structure recited is noted, however, such limitations still do not appear to require or positively recite any actual combination of the swellable body or system of claim 1 with a well, wellbore and/or associated structure. Hence,

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the system or swellable body of claim 1 is still deemed capable of use in a wellbore, in view of the myriad applications set forth, including civil engineering applications.

As per claims 14 and 15, as noted above with respect to claim 1, Otsuka discloses use of the shaped and vulcanized body in civil engineering applications. In using and/or emplacing the shaped and vulcanized body of Otsuka in a civil engineering environment, especially for preventing leakage around tunnels, it is deemed at least a portion of the water encountered will inherently or necessarily comprise "formation" water, e.g., due to a nearby aquifer, and with such formation water encountered may be fairly characterized as "saline", depending on the actual earthen or tunnel environment actually encountered.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Claims 8-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 16 and 17 are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE SUCHFIELD whose telephone number is (571)272-7036. The examiner can normally be reached on M-F (6:00 - 2:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gs
October 3, 2008

/GEORGE SUCHFIELD/
Primary Examiner, Art Unit 3676